

Self-service Repair Manual for vivo Y21d / Y21e / Y31 5G / Y31e 5G

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1 About this manual

1.1 Purpose

This manual is intended to guide DIY hobbyists with certain hands-on skills and repair experience in replacing official components of vivo phones.

1.2 Caution

All features, characteristics, specifications, and other device information provided in this manual, including but not limited to device advantages, design, pricing, components, performance, availability, and functionality, are subject to change without prior notice. vivo reserves the right to modify this manual or any descriptions herein at any time without the obligation to give notice of such modifications. Please read through this manual carefully before repair. If you do not meet the repair conditions, do not disassemble the device. You may visit a vivo customer service center for repairs.

1.2.1 Repair notes

Warning: Failure to follow the instructions herein or the use of non-official vivo components or improper tools may damage the device, its components, or other property; impair device functionality and water resistance; and in severe cases, cause fires or other safety hazards, leading to personal injury or death.

(1) vivo assumes no liability for any damage or defects resulting from repairs made by unauthorized carriers, yourself, or other non-professionals. vivo is not responsible for any device damage, personal injury, or other safety consequences caused by failure to follow this manual.

(2) Any damage or defects resulting from attempts to repair the device by anyone other than a vivo-certified service provider are not covered by the warranty.

(3) We recommend that you use only official tools for repairing. Most electronic components are sensitive to electromagnetic forces, and low-quality tools may easily damage your device. For tool details, see Section 3.1.

(4) We recommend that you use only official spare parts. Third-party spare parts may not function properly and may cause fires or personal injury.

(5) Some components, such as laser focusing/proximity/fingerprint sensors, rear cameras, touchscreen panels, and speakers, may require calibration to ensure their performance after repair.

(6) The water and dust resistance of a device repaired by yourself or other non-professionals cannot be guaranteed.

(7) If you need to access device fault data or obtain more detailed diagnostics, please visit a vivo customer service center.

(8) If you need to replace components that are unavailable on the market, please visit a vivo customer service center for further assistance.

(9) Before making repairs, back up important data stored in the device.

(10) Before making repairs, wear proper safety gear. vivo is not responsible for any injury due to failure to wear proper safety gear. For details of the required disassembly and assembly tools, see Section 3.1.

(11) Make repairs in a safe location.

(12) Before making repairs, make sure that the device is powered off and its battery is fully discharged.

(13) If the device is damaged, emits smoke, or produces a burning smell, stop repairing it immediately and contact vivo customer service. If a fire is started, extinguish it with a carbon dioxide or dry powder fire extinguisher, specialized foam, sand, soil, gravel, or a dedicated lithium-ion battery fire suppressant.

(14) When repairing the device, wear protective gear such as safety goggles, gloves, and masks.

(15) When removing the back cover, take care not to damage the device. Before reassembling the device, make sure that no free screws or foreign objects are left around the battery.

(16) During reassembly, inspect the back cover for abnormalities before reinstalling it. Avoid impact or pressure on the battery to prevent damage. If the battery is damaged, please visit a vivo customer service center.

1.2.2 ESD precautions

Electrostatic discharge (ESD) is a sudden flow of electric current between two charged objects due to contact, a short circuit, or dielectric breakdown. ESD negatively affects mobile devices, particularly their electronic components.

(1) We recommend that you wear anti-static wrist straps and gloves, and use anti-static mats when you repair the device.

(2) Increase airflow in the work area to reduce the likelihood of accidental ESD. In an environment with low humidity, such as an air-conditioned room, ESD is more likely to happen.

2 Warranty

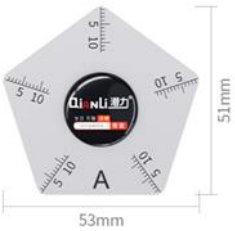

2.1 A 90-day warranty is provided for official spare parts. If any quality issues arise with them within that period, you may contact vivo for a replacement.






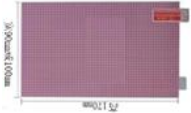




2.2 A device repaired by anyone other than a vivo-authorized service provider is not covered by the warranty, and you will bear the repair costs.

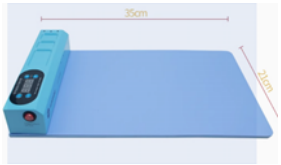
2.3 Any damage caused during self-service repairs will be your responsibility.

3 Tools

3.1 Hardware tools

Tool name	Photo	Usage
Metal pry pick (with a scale)		Disassembling the display module
triangular prying pick		Remove the middle frame

Screwdriver kit (rubber-grip dual-purpose screwdriver, 6 × 100 mm)		Removing and installing screws
PET pry sheet		Removing the back cover and display module
Suction cup		Removing the back cover
Anti-static carbon fiber tweezers (with pointed tips)		Removing board-to-board (BTB) and coaxial cable connectors
Metal flat-head tweezers		Removing the M board and ANA board, or cleaning adhesive
Anti-shatter film		Preventing glass shattering on screen / back cover
Universal pressure fixture		Securing the screen or back cover
Electrical insulation tape, 3M, black, 17 mm		Optical calibration
False finger, flesh-colored, 20 × 20 × 12 mm		Testing electro-optical fingerprint recognition
False finger, black, 22 × 22 × 12 mm		Testing electro-optical fingerprint recognition

Heating pad (default temperature: 65°C)		Heating the back cover and screen
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3.1.1 Tool purchase

Official purchase link: <https://www.vivo.com/eu/view/support/aboutSelfServiceRepair?code=selfServiceRepair>

3.2 Software update and software tools (to be confirmed after software release)

3.2.1 Software update via FOTA

- To update software, go to Settings > System Update.
- If the system is already of the latest version, no update is needed.
- If a software update is available, you can set the time for automatic update.

Note:

1. Updating software via mobile data may incur additional fees.
2. If the latest software has been downloaded to the device, these options do not take effect.

3.2.2 Self-diagnosis

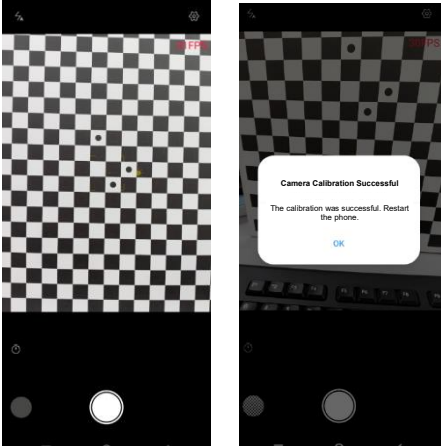
Before and after repair, perform a self-diagnosis to check if the device functions properly.

Open the vivo Store / vivo.com app, go to Support > Hardware Test > Self-calibration, and enter the calibration code "SELFREPAIR" to perform the check.

3.2.3 Self-calibration on the vivo Store / vivo.com app

You can perform calibration after replacing the display or camera, such as the calibration of the rear cameras (for devices with two or more rear cameras), in-display fingerprint scanner, infrared proximity sensor, and ambient light sensor. The calibration ensures proper functionality of components after repairs.




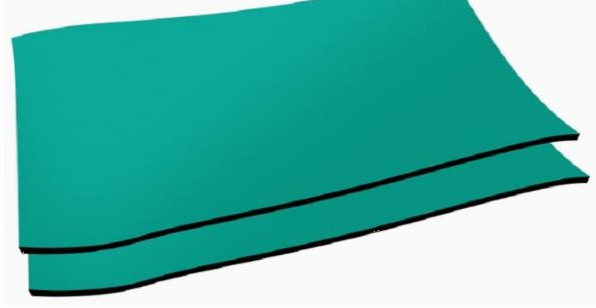
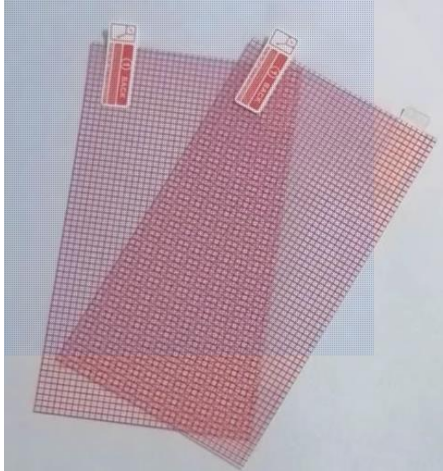
The following table describes calibration items and instructions.

Calibration item	Instruction	Illustration	Description
Rear cameras	Open the vivo Store / vivo.com app, go to Support > Hardware Test > Self-calibration, enter the calibration code "SELFREPAIR", tap Rear dual-camera calibration, and calibrate the cameras.		This calibration is required after M board disassembly or replacement of any rear camera.

<p>In-display fingerprint scanner</p>	<p>Open the vivo Store / vivo.com app, go to Support > Hardware Test > Self-calibration, enter the calibration code "SELFREPAIR", tap Screen finger calibration, and calibrate the fingerprint scanner.</p>		<p>This calibration is required after replacement of the display assembly, display module, or fingerprint module.</p>
<p>Infrared proximity sensor</p>	<p>Open the vivo Store / vivo.com app, go to Support > Hardware Test > Self-calibration, enter the calibration code "SELFREPAIR", tap Infrared proximity sensor calibration, and calibrate the infrared proximity sensor.</p>		<p>This calibration is required after M board disassembly or replacement of the display assembly or display module.</p>
<p>Ambient light sensor</p>	<p>Open the vivo Store / vivo.com app, go to Support > Hardware Test > Self-calibration, enter the calibration code "SELFREPAIR", tap Photosensitive calibration, and calibrate the ambient light sensor.</p>		<p>This calibration is required after M board disassembly or replacement of the display assembly or display module.</p>

3.3 Protective tools

Tool name	Photo	Usage
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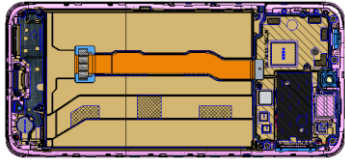
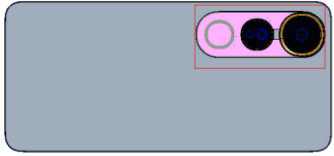
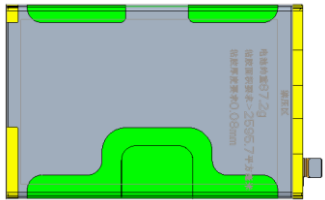
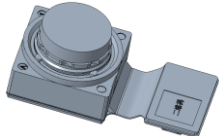
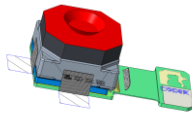
<p>Safety goggles</p>		<p>Preventing liquid/splinter splashes from hurting your eyes during repairs</p>
<p>Anti-static cut-resistant gloves</p>		<p>Preventing ESD damage and cuts during repairs</p>
<p>Anti-static wrist strap</p>		<p>Preventing ESD damage to the device during repairs</p>
<p>Anti-static mat</p>		<p>Preventing ESD damage to the device during repairs</p>
<p>Anti-shatter film</p>		<p>Preventing device damage or personal injury due to screen or back cover shattering</p>

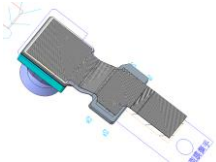
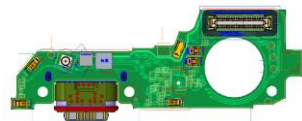
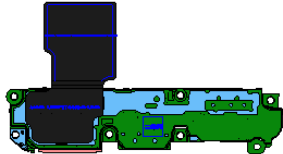



Fire bucket		Containing a burning battery
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Note: vivo does not provide all protective tools. You need to purchase them from other sources.

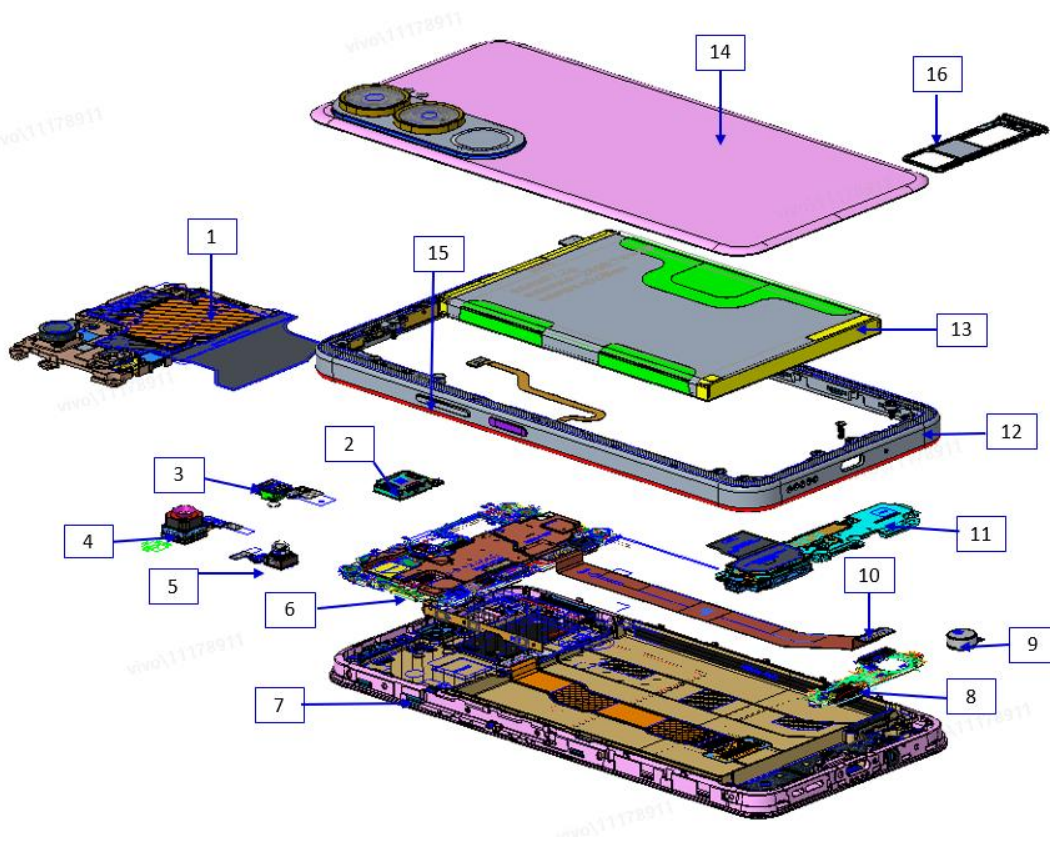
4 Repair guide

4.1 Spare parts

No.	Material name	Purchase code	Adaptation project	Illustration
1	Display assembly	5438144	Y31 5G/Y31e 5G	
		5438237	Y21d/Y21e	
2	Back cover assembly	5438152 (Black) 5438151 (White)	Y31e 5G	
		5438149 (Black) 5438150 (White)	Y31 5G	
		5438235 (Purple) 5438236 (Green)	Y21e	
		5438233 (Purple) 5438234 (Green)	Y21d	
3	Battery assembly	5438239	Y21e/ Y31e 5G	
		5438238	Y21d/ Y31 5G	
4	Rear Secondary Camera assembly	5438147	Y31 5G/Y31e 5G	
		5438231	Y21d/Y21e	
5	Rear main camera	5438146	Y31 5G/Y31e 5G	
		5438230	Y21d/Y21e	
6	Front camera	5438145	Y31 5G/Y31e 5G	

		5438229	Y21d/Y21e	
7	ANA board	4935573	Y31 5G/Y31e 5G	
		4935618	Y21d/Y21e	
8	Speaker	5438148	Y31 5G/Y31e 5G	
		5438232	Y21d/Y21e	
9	Side buttons	5438139(Black) 5438140 (White)	Y31 5G/Y31e 5G	
		5438224 (Purple) 5438225 (Green)	Y21d/Y21e	
10	Card tray	5438141 (Black) 5438142 (White)	Y31 5G/Y31e 5G	
		5438226 (Purple) 5438227 (Green)	Y21d/Y21e	
11	Frame Component	5438153 (Black) 5438154 (White)	Y31 5G/Y31e 5G	
		5438240 (Purple) 5438241 (Green)	Y21d/Y21e	

4.2 Device breakdown



N.º	Material name
1	M board bracket assembly
2	Receiver Component
3	Front camera
4	Rear main camera
5	Rear Secondary Camera assembly
6	M board
7	Display assembly
8	ANA board
9	Motor assembly
10	FMA board
11	Speaker Component
12	Frame Component

13	Battery assembly
14	Back cover assembly
15	Side buttons
16	Card tray

4.3 Disassembly and assembly guide

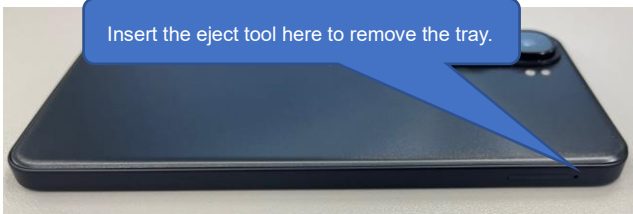

- Before starting repair, be sure to complete the following steps:
- Back up your data
- Fully discharge the battery
- Power off the device and disconnect all external USB cables
- Wear anti-static gloves
- If a cosmetic damage or adhesive overflow occurs after assembly, please visit an official vivo Service Center for inspection and support

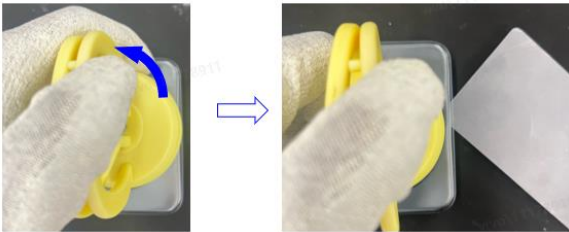
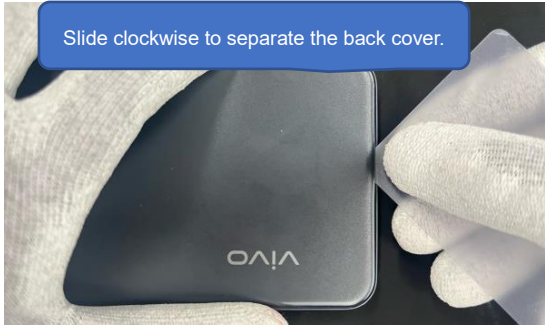



4.3.1 Replace the back cover

Difficulty: low

Duration: 6–10 minutes

Required spare parts: back cover assembly

Disassembly		
Operation	Illustration	Remarks
Step 1: Power off the device, and then insert the eject tool into the SIM card eject hole to remove the card tray.		
Step 2: Set the heating pad to 65°C and place the device on it for 5 minutes.		The default temperature is 65°C. If you need to adjust the temperature, refer to the equipment manual.

<p>Step 3: Place the suction cup at the center of the bottom edge of the back cover, lift it to create a small gap, and insert a pry pick into the back cover.</p>		<p>Note:</p> <ol style="list-style-type: none"> 1. Use a handle suction cup. Be careful to avoid injury, as its handle may loosen during use. 2. Do not insert the pry pick deeper than 5 mm.
<p>Step 4: Slide the pry pick clockwise as shown in the illustration to separate the back cover.</p>		
<p>Step 5: After separating all edges, gently lift the back cover from the position indicated in the illustration.</p>		
<p>Step 6: Fully separate the back cover from the device.</p>		
<p>Step 7: Clean residual adhesive from the device frame and back cover using pointed anti-static tweezers.</p>		<p>Avoid touching or leaving debris on the rear cameras or the camera glass on the back cover. Take care not to damage nearby components.</p>



Step 8: Fully clean residual adhesive.



Assembly

Operation

Illustration

Remarks

Step 1: Apply the back cover adhesive tape and the rear main camera adhesive tape.



Step 2: Remove the release liners from the back cover adhesive tape and the rear main camera adhesive tape.





<p>Step 3: Align the back cover precisely and press firmly onto the middle frame.</p>		
<p>Step 4: Wrap your fingers with a lint-free cloth and press adhesive areas to activate bonding.</p>		

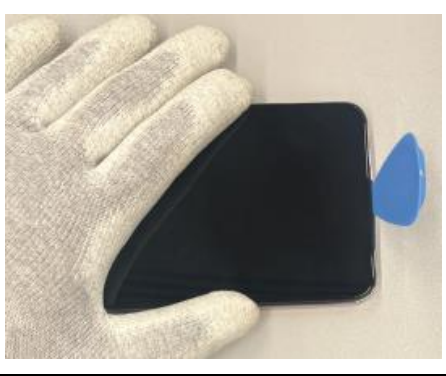




4.3.2 Replace the middle frame

Difficulty: low

Duration: 8–12 minutes

Required spare parts: middle frame assembly

Disassembly		
Operation	Illustration	Remarks
<p>Step 1: Remove the back cover.</p>	<p>See Section 4.3.1.</p>	
<p>Step 2: Use a Phillips screwdriver to remove the 17 M board bracket screws as shown in the illustration.</p>		
<p>Step 3: Set the heating pad to 65°C and place the phone screen-down on it for 3 minutes.</p>		<p>The default temperature is 65°C. If you need to adjust the temperature, refer to the equipment manual.</p>

<p>Step 4: After removing the screws, insert a triangular pry pick into the gap at the bottom USB port.</p>		
<p>Step 5: Slide the pry pick clockwise as shown in the illustration to separate the middle frame.</p>		
<p>Step 6: After the middle frame is separated, use anti-static tweezers to remove the M board bracket.</p>		
<p>Step 7: Use anti-static tweezers to disconnect the BTB connector of the fingerprint scanner.</p>		
<p>Step 8: Remove the middle frame.</p>		

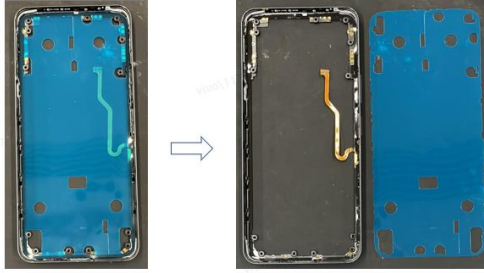
Assembly

Operation	Illustration	Remarks
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Step 1: Use anti-static tweezers to remove any residual back adhesive from the middle frame and the display assembly.



Step 2: After the residual back adhesive is removed, apply a new middle frame back adhesive and remove the release liner.



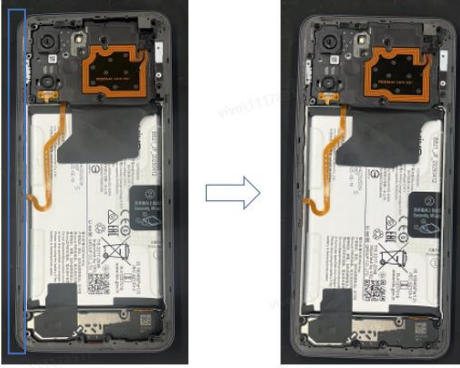

Step 3: Connect the BTB connector of the fingerprint scanner to the M board.



Step 4: Install the M board bracket.



Check for any camera module misalignment.


<p>Step 5: Snap the middle frame back on starting from the button side. Once the button side is securely seated, proceed to snap in the SIM card tray side.</p>		
<p>Step 6: Install the 17 screws.</p>		
<p>Step 7: Install the back cover.</p>	<p>See Section 4.3.1.</p>	

4.3.3 Replace the lower speaker

Difficulty: low

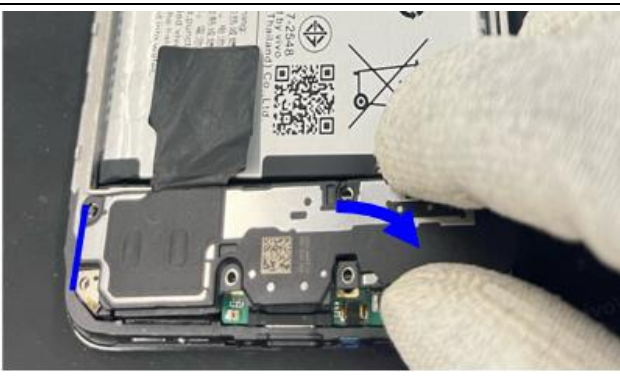
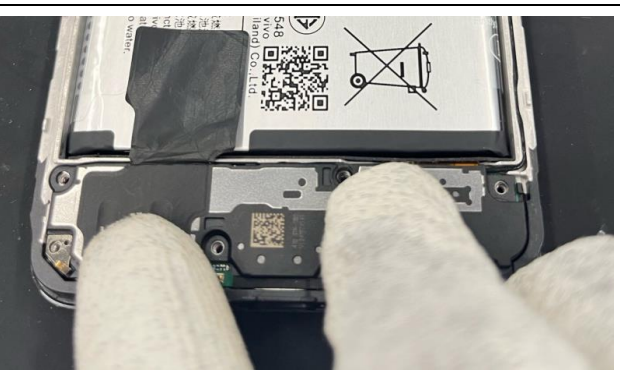
Duration: 8–12 minutes

Required spare parts: lower speaker assembly

Disassembly		
Operation	Illustration	Remarks
<p>Step 1: Remove the back cover.</p>	<p>See Section 4.3.1.</p>	
<p>Step 2: Remove the middle frame.</p>	<p>See Section 4.3.2.</p>	
<p>Step 3: Use pointed tweezers to lift the lower speaker from the indicated position.</p>		

<p>Step 4: Remove the lower speaker.</p>			
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Assembly

Operation	Illustration	Remarks
<p>Step 1: Before installation, check the speaker for attached foreign objects. Then, mount the speaker to the indicated position of the main upper part.</p>		
<p>Step 2: Make sure that the speaker lies flat without lifting.</p>		
<p>Step 3: Install the middle frame.</p>	<p>See Section 4.3.2.</p>	
<p>Step 4: Install the back cover.</p>	<p>See Section 4.3.1.</p>	





4.3.4 Replace the ANA board (incl. the main mic and charging port)


Difficulty: low

Duration: 9–13 minutes

Required spare parts: ANA board assembly

Disassembly		
Operation	Illustration	Remarks
<p>Step 1: Remove the back</p>	<p>See Section 4.3.1.</p>	

cover.		
Step 2: Remove the middle frame.	See Section 4.3.2.	
Step 3: Remove the lower speaker.	See Section 4.3.3.	
Step 4: Disconnect the BTB connectors and coaxial cable from the indicated positions.		
Step 5: Use pointed tweezers to lift the ANA board from the indicated position.		
Assembly		
Operation	Illustration	Remarks
Step 1: Align the bottom edge of the ANA board with the USB port, and then press the board until it lies flat without lifting.	 	

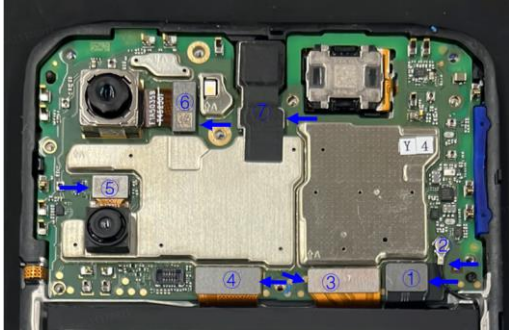
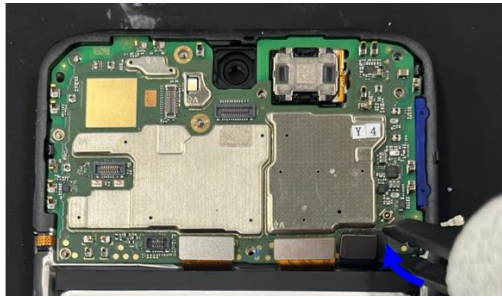
<p>Step 2: Connect the coaxial cable and neatly route it into the cable slots. Connect the display BTB connector.</p>		
<p>Step 3: Install the middle frame.</p>	<p>See Section 4.3.2.</p>	
<p>Step 4: Install the back cover.</p>	<p>See Section 4.3.1.</p>	

4.3.5 Replace the M board

Difficulty: low

Duration: 9–12 minutes

Required spare parts: M board

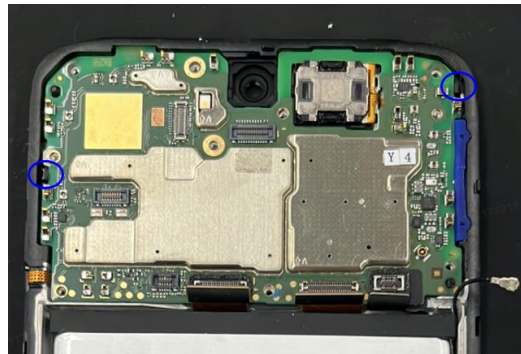
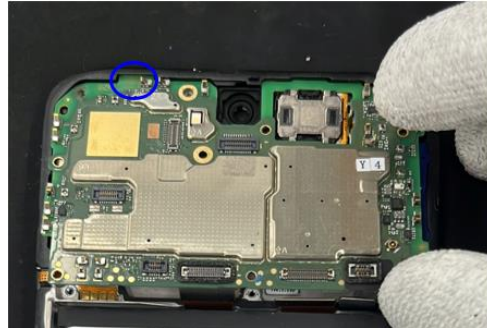
Disassembly		
Operation	Illustration	Remarks
<p>Step 1: Remove the back cover.</p>	<p>See Section 4.3.1.</p>	
<p>Step 2: Remove the middle frame.</p>	<p>See Section 4.3.2.</p>	
<p>Step 3: Use pointed anti-static tweezers to disconnect BTB connectors and/or coaxial cables of the battery and other components.</p>		<p>After the cameras are removed, protect them from dust and contamination. Avoid touching the lenses to prevent impact on photo quality.</p>
<p>Step 4: Use pointed anti-static tweezers to pry up the M board from the indicated position.</p>		

Step 5: Remove the M board.



Assembly

Step 1: Align the top edge of the M board with the main upper part, and then secure the M board. Make sure that the board lies flat without lifting, and snap-fits are engaged in place.



Step 2: Connect all BTB connectors and coaxial cables in the indicated order.



Step 3: Install the middle frame.

See Section 4.3.2.

Step 4: Install the back cover.

See Section 4.3.1.

Step 5: Perform calibration.

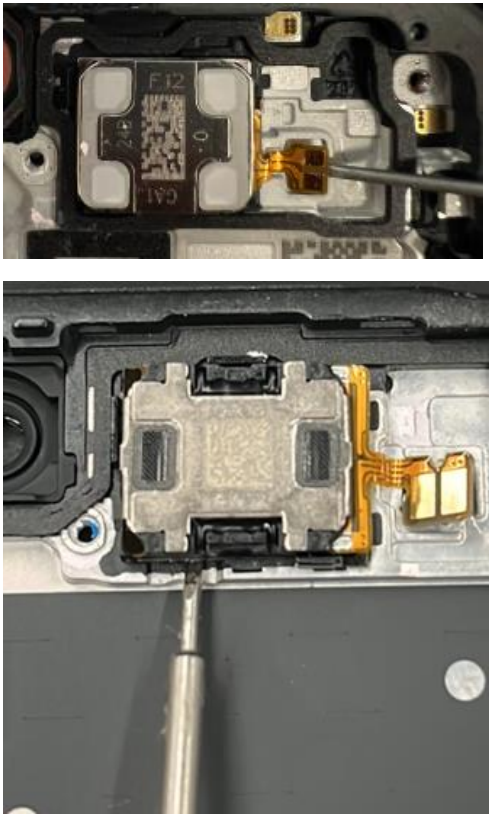

After assembly, calibrate the rear cameras, ambient light sensor, and infrared proximity sensor as specified in Section 3.2.3.

4.3.6 Replace the upper speaker

Difficulty: low

Duration: 9–12 minutes

Required spare parts: upper speaker assembly

Disassembly		
Operation	Illustration	Remarks
Step 1: Remove the back cover.	See Section 4.3.1.	
Step 2: Remove the middle frame.	See Section 4.3.2.	
Step 3: Remove the M board.	See Section 4.3.5.	
Step 4: Use a flat-head screwdriver to detach the speaker reinforcement plate, and then remove the upper speaker unit.		When removing the speaker unit, do not insert the screwdriver too deeply to avoid damaging the display.
Assembly		
Operation	Illustration	Remarks
Step 1: Clean residual adhesive from the upper speaker area. Apply a new adhesive tape to secure the upper speaker to the middle frame and remove the blue release liner.		Avoid damaging the display during adhesive removal.

Step 2: Press the speaker to the position on the main upper part and connect the gold finger connector.



4.3.7 Replace the battery

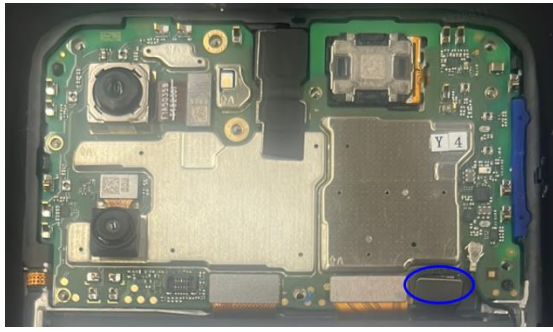
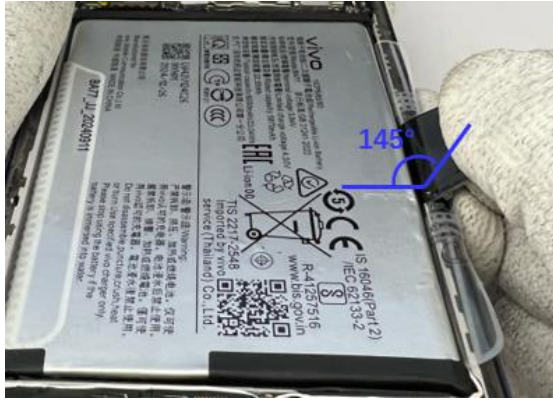
Difficulty: low

Duration: 6–10 minutes

Required spare parts: battery assembly

Before you remove the battery:

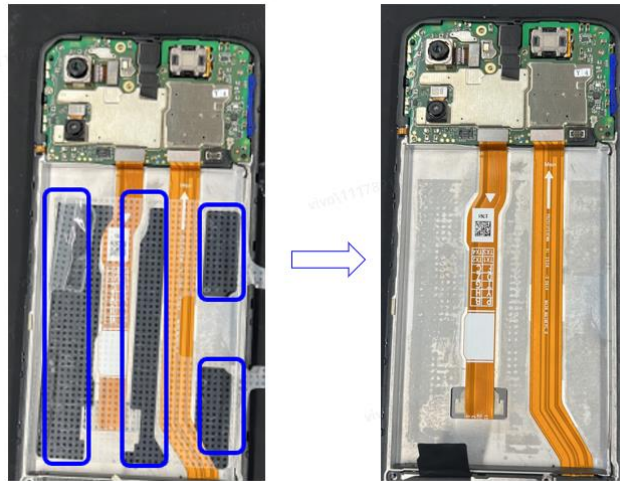
1. Fully discharge the battery.
2. Prepare a fire bucket in case of a battery fire.

Disassembly		
Operation	Illustration	Remarks
Step 1: Remove the back cover.	See Section 4.3.1.	
Step 2: Remove the middle frame.	See Section 4.3.2.	
Step 3: Disconnect the BTB connector of the battery.		
Step 4: Slowly pull the battery PET film by its pull tab, maintaining a 145° angle between the tab and battery surface during pulling.		Keep your hands clear of the battery area during the process.
Assembly		
Operation	Illustration	Remarks

Step 1: Inspect the battery for swelling, deformation, or damage. If any defects exist, the battery cannot be reused and must be replaced.

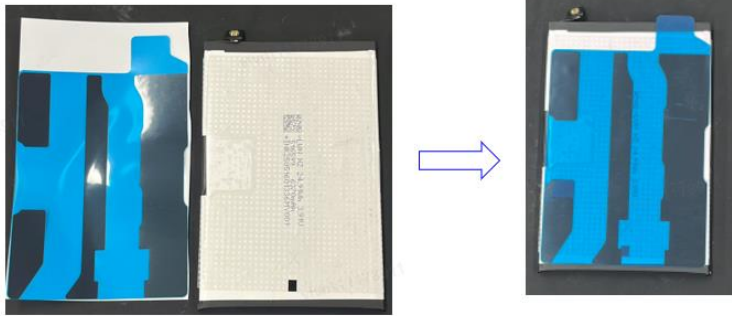

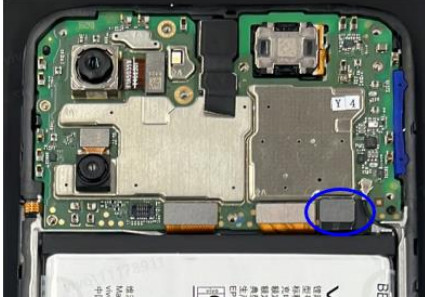


Step 2: Clean residual adhesive from both the main upper part and battery. Remove any residual black adhesive from the indicated areas.



Step 3: Take a new battery PET film and apply it to the battery as indicated.



<p>Step 4: Apply the battery back adhesive as indicated.</p>		
<p>Step 5: Remove the release liner of the battery back adhesive and install the battery into the compartment. Press the indicated adhesive areas with your fingers to activate bonding.</p>		<p>Before installation, make sure that the battery and battery compartment are free of foreign objects.</p>
<p>Step 6: Connect the BTB connector of the battery.</p>		
<p>Step 7: Install the middle frame.</p>	<p>See Section 4.3.2.</p>	
<p>Step 8: Install the back cover.</p>	<p>See Section 4.3.1.</p>	

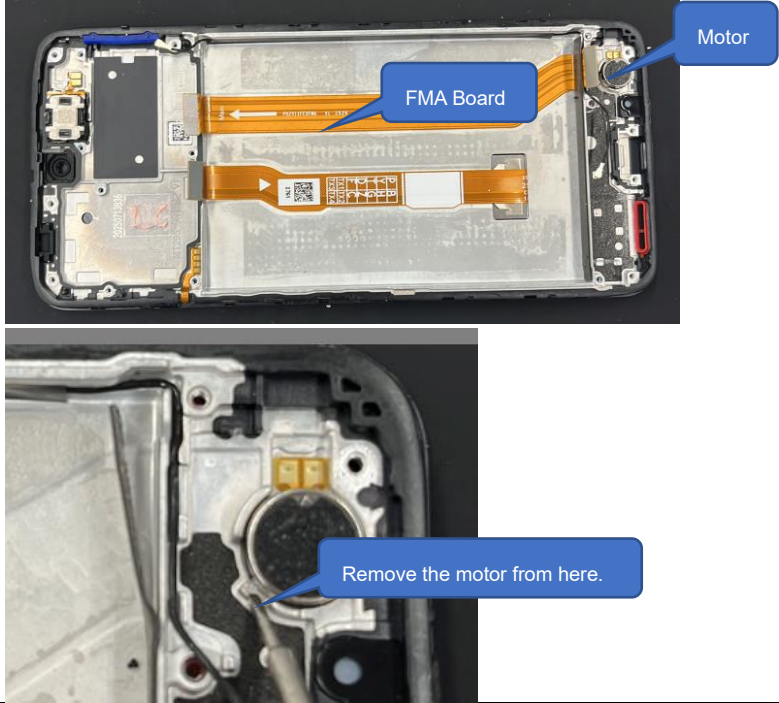

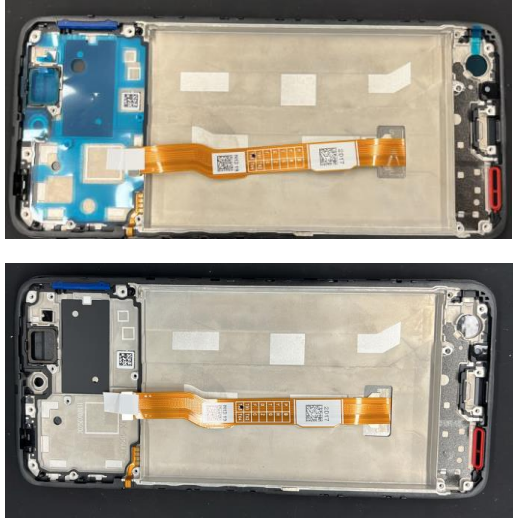
4.3.8 Replace the display assembly

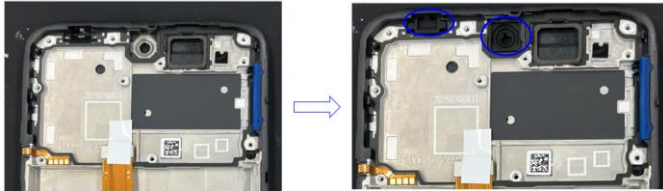


Difficulty: medium

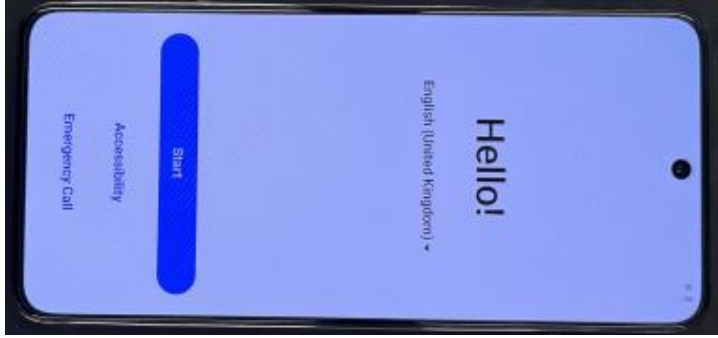
Duration: 15–20 minutes

Required spare parts: display assembly

Disassembly		
Operation	Illustration	Remarks
Step 1: Remove the back cover.	See Section 4.3.1.	
Step 2: Remove the middle frame.	See Section 4.3.2.	
Step 3: Remove the battery.	See Section 4.3.7.	
Step 4: Remove the M	See Section 4.3.5.	

board.		
Step 5: Remove the upper speaker.	See Section 4.3.6.	
Step 6: Remove the lower speaker.	See Section 4.3.3.	
Step 7: Remove the ANA board.	See Section 4.3.4.	
Step 8: Remove the FMA board and motor.		
Step 9: The removal is done.		
Assembly		
Operation	Illustration	Remarks
Step 1: Take a new display assembly. Remove the release liners at the M board area, upper speaker area, and motor area.		

<p>Step 2: Install the silicone cases for the front camera, infrared proximity sensor, and ambient light sensor.</p>		
<p>Step 3: Install the upper speaker, M board, and motor.</p>	<p>See Section 4.3.6 and Section 4.3.5.</p>	
<p>Step 4: Connect the coaxial cable: After snapping one end of the coaxial cable onto the M board, route the cable smoothly along the cable channel into the slots, and then apply a back adhesive over the cable position.</p>		
<p>Step 5: Install the ANA board.</p>	<p>See Section 4.3.4.</p>	
<p>Step 6: Install the FMA board: First, apply a back adhesive onto the FMA board and remove the release liner. Then, connect one of the FMA BTB connectors to the M board and the other to the ANA board. Finally, secure the FMA board to the battery compartment and adhere it to the soft pad at the bottom of the battery compartment.</p>		
<p>Step 7: Install the lower speaker.</p>	<p>See Section 4.3.3.</p>	
<p>Step 8: Install the battery.</p>	<p>See Section 4.3.7.</p>	
<p>Step 9: Install the middle frame and back cover.</p>	<p>See Section 4.3.2 and Section 4.3.1.</p>	


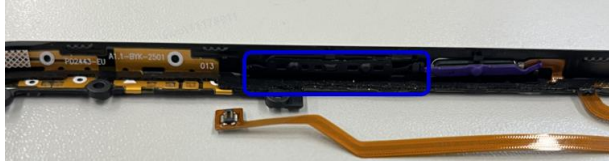
<p>Step 10: Power on the device to verify normal screen display.</p>		
<p>Step 11: Perform calibration.</p>	<p>After assembly, calibrate the rear cameras, in-display fingerprint scanner, infrared proximity sensor, and ambient light sensor as specified in Section 3.2.3.</p>	

4.3.9 Replace the side buttons (volume buttons)

Difficulty: low

Duration: 6–8 minutes

Required spare parts: side button assembly

Disassembly		
Operation	Illustration	Remarks
<p>Step 1: Remove the back cover.</p>	<p>See Section 4.3.1.</p>	
<p>Step 2: Remove the middle frame.</p>	<p>See Section 4.3.2.</p>	
<p>Step 3: While pressing the button, use a flat-head screwdriver to pry out the side button snap-fits from the indicated slots.</p>		
Assembly		
Operation	Illustration	Remarks
<p>Step 1: Place the new side buttons into their slots.</p>		
<p>Step 2: Use pointed anti-static tweezers to put the button thread into the snap-fits.</p>	